DHAMMMANUPASSANA or NATURAL PHENOMENOM

Dr. Aung Myat

- Dhammanupassana is the pali term for meditation on the Dhamma.
- It is listed as the fourth Foundation of Mindfulness in the SatipatthanaSutta.
- "Remain with the Dhamma as an island, the Dhamma as your refuge, without anything else as a refuge." (SamyuttaNikaya 47.13 and also at DighaNikaya 26)
- The Dhamma is the (more common) Sanskrit word for Dhamma (Pali) which means Truth or Law.
- The word Dhamma represents the Buddha's teachings and includes all of the Buddhist concepts, doctrines, and "theory."
- The Dhamma is considered one of the most essential aspects of practice, one of the Triple Gems, the other two being the sangha(community) and the Buddha.
- Since the Dhamma is a term for the all-inclusiveness of the Buddha's teachings, the Buddha emphasized the importance of Dhamma:
- He confirms that the translation of the fourth foundation of mindfulness does refer to the Dhamma in this introduction to one of the books of the SamyuttaNikaya:
- Dhamma as a Natural Phenomenom.
- Nature of Things Five Aggregates:
- "Furthermore, focusing on mental qualities in and of themselves with reference to the five aggregates for sustenance/clinging.
- And how does he remain focused on mental qualities in and of themselves with reference to the five aggregates for sustenance/clinging?
- There is the case [discerns]: 'Such is form, such its origination, such its disappearance. Such is feeling...Such is perception...Such are processes...Such is consciousness, such its origination, such its disappearance".
- Sixfold Internal and External Sense Media:
- Mindfulness Of Mental Objects (dhammanupassana)
- Mindfulness of Mental Objects
- Dhammanupassana practiced in regards to the Truths, certain aspects of the teaching and for an example contemplation of Nibbana by thinking about Truths, while being mindful of the thoughts and thinking and then insight knowledge(s) regarding mental object(s) which are being spontaneuosly arises?
- "The third foundation of mindfulness is mindfulness of consciousness or mind.
- At this point, we will not try to differentiate between what we call mind and mental states.
- To digress a little on this matter; there is a fourth foundation of mindfulness regarding Dhamma, translated as mental objects.
- This fourth foundation of mindfulness is more general and there are different interpretations of what it means.
- Generally, there are two types of interpretations.
- One interpretation is that Dhamma means certain aspects of the teachings, whereby when we contemplate on it—insight ie. Vipassana may arise.
- The other meaning is mental objects.Concerning this, it may also be interpreted as Dhamma in the sense of phenomena because all phenomena can be made the object of the mind.
- Therefore, the field is very wide; it stretches beyond the fields of the other three forms of objects. .

• We will just deal with the mind. We will includethe mental states, which have often been classified under Dhamma or mental objects.
• Taking this meaning of Dhamma as Phenomenom,ie. Natural Phenomenom.
we shall deal intensively, one of the Natural Phenomenom, The Process of Seeing.
• For this process to occur there are four essentials.

(1) LIGHT	ဝတ္ထု	luminece
(2) OBJECT	အာရုံ	sense objects
(3) SENSE BASE	စက္ခု ဒွါရ	opsin
(4) FOCI	မနသိကာရ	attention

• LIGHT (video)
• Light is electromagnetic radiation within a certain portion of the electromagnetic spectrum.
• The word usually refers to visible light, which is visible to the human eye and is responsible for the sense of sight
• Visible light is usually defined as having wavelengths in the range of 400–700 nanometres (nm), or 4.00 × 10−11 to 7.00 × 10−11 m, between the infrared (with longer wavelengths) and the ultraviolet (with shorter wavelengths).
• This wavelength means a frequency range of roughly 430–750 (Tetrahertz).
• This wavelength means a frequency range of roughly 430–750 Tetrahertz (THz).
• The main source of light on Earth is the SUN.
• Sunlight provides the energy that green plants use to create sugars mostly in the form of starches, which release energy into the living things that digest them.
• This process of photosynthesis provides virtually all the energy used by living things.
• Historically, another important source of light for humans has been fire, from ancient campfires to modern kerosene lamps.
• With the development of electric lights and power systems, electric lighting has effectively replaced firelight.
• Some species of animals generate their own light, a process called bioluminescence.
• For example, fireflies use light to locate mates, and vampire squids use it to hide themselves from prey.
• The primary properties of visible light are intensity, propagation direction. frequency or wavelength spectrum, and polariisation, while its speed in a vacuum, 299 792 458 meters per second, is one of the fundamental constants of nature.
• Visible light, as with all types of electromagnetic radiation (EMR), is experimentally found to always move at this speed in a vacuum.
• In physics, the term LIGHT sometimes refers to electromagnetic radiation of any wavelength, whether visible or not.
• In this sense.Gamma rays, X-rays, microwaves and radio waves are also light.
• Like all types of light, visible light is emitted and absorbed in tiny "packets" called Photons, and exhibits properties of both waves and particles.
• This property is referred to as the wave-particle duality.
• The study of light, known as OPTICS, is an important research area in modern physics.
• EMR in the visible light region consists of quanta (called photons) that are at the lower end of the energies that are capable of causing electronic excitation within molecules, which lead to changes in the bonding or chemistry of the molecule.
• At the lower end of the visible light spectrum, EMR becomes invisible to humans (infrared) because its photons no longer have enough individual energy to cause a lasting molecular change (a change in conformation) in the visual molecule retinal in the human

retina, which change triggers the sensation of vision

- Speed of light
- The speed of light in a vacuum is defined to be exactly 299 792 458 m/s (approx. 186 282 miles per second).
- The fixed value of the speed of light in SI units results from the fact that the metre is now defined in terms of the speed of light.
- All forms of electromagnetic radiation move at exactly this same speed in vacuum.
- Noting discrepancies in the apparent period of Io's orbit, he calculated that light takes about 22 minutes to traverse the diameter of Earth's orbit.
- However, its size was not known at that time. If Rømer had known the diameter of the Earth's orbit, he would have calculated a speed of 227,000,000 m/s.
- Fizeau was able to calculate the speed of light as 313,000,000 m/s.
- The precise measurements yielded a speed of 299,796,000 m/s.[
- The effective velocity of light in various transparent substances containing ordinary matter, is less than in vacuum.
- For example, the speed of light in water is about 3/4 of that in vacuum.
- Time taken for a Photon(light) from the Sun down to the Earth Planet is - 8mins. 40 secs,
- The next type of meditation the Supreme Buddha preached was meditation on sense bases (ĀyatanaBhāvanā).
- That is. meditation on six internal and external sense bases or faculties.
- This eye, ear, nose. tongue. body. and mind are the six internal sense bases.
- It is through these six that the paticcasamuppāda and pancaupādānaskandha generate completely..
- Mediation on sense bases is another type of meditation that has been there since the time of the Supreme Buddha.
- These meditations have been practiced by millions of people for a long time, and they have attained path-fruition by doing so.
- Āyatana (Pali; Sakrit) is a Buddhist term that has been translated as "sense base", "sense-media" or "sense sphere."
- In Buddhism, there are six internal sense bases (Pali: ajjhattikāniāyatanāni; also known as, "organs", "gates", "doors", "powers" or "roots") and six external sense bases (bāhirāniāyatanāni or "sense objects"; also known as vishaya or "domains").
- Thus, there are six internal-external (organ-object) pairs of sense bases:
- eye and visible objects
- ear and sound
- nose and odor
- tongue and taste
- body and touch
- mind and mental objects
- Visual perception is the ability to interpret the surrounding environment by processing information that is contained in visible light.
- The resulting perception is also known as eyesight, sight, or vision(visual, optical, or ocular). Cakhuvinanna.
- The various physiological components involved in vision are referred to collectively as the visual system, and are the focus of much research in psychology, cognitive science, neuroscience,andmolecular biology, collectively referred to asVISION Science
- How Your Eyes Work
- Vision begins when light rays are reflected off an object and enter the eyes through the cornea, the transparent outer covering of the eye.
- The cornea bends or refracts the rays that pass through a round hole called the pupil.

- The iris, or colored portion of the eye that surrounds the pupil. opens and closes (making the pupil bigger or smaller) to regulate the amount of light passing through.
- The light rays then pass through the lens, which actually changes shape so it can further bend the rays and focus them on the retina at the back of the eye.
- The retina is a thin layer of tissue at the back of the eye that contains millions of tiny light-sensing nerve cells called rods and cones, which are named for their distinct shapes.
- Cones are concentrated in the center of the retina, in an area called the macula. In bright light conditions, cones provide clear, sharp central vision and detect colors and fine details.
- Rods are located outside the macula and extend all the way to the outer edge of the retina. They provide peripheral or side vision. Rods also allow the eyes to detect motion and help us see in dim light and at night.
- These cells in the retina convert the light into electrical impulses. The optic nerve sends these impulses to the brain where an image is produced.
- Here are illustrations of rods and cones.
- Cones are concentrated in the center of the retina in an area called the macula, and provide clear, sharp central vision and detect colors and fine details.
- Rods are located outside the perimeter of the macula and extend all the way to the outer edge of the retina.
- They provide peripheral vision, allow the eye to detect motion, and help us see in dim light and at night.
- Follow Light from the candle to Brain. (video)
- The Process of Seeing
- There is a kind of perception that takes place as our brains decide what it is we are actually seeing.
- You can actually watch this process of settling upon the right image if you look for it.
- It is especially pronounced if the brain can't immediately decide what it's viewing. For example, if you see something in the distance you can't quite make out.
- The gestalt changes from image to image until the brain is satisfied that it is the correct one.
- Try to catch it sometime.
- Today, for example, I saw a man with three arms driving toward me.
- Perhaps it was that he had a cellphone stuck in his ear.
- Perhaps I had been thinking about a hydra.
- Who knows? In any case, we see what we have been taught to see.
- That is, the process of seeing is learned from the time we are infants
- This is basically why all of us see the same things, and why anyone who doesn't is considered crazy.
- Artists have long played on the edge of perceptions that are not readily available to the rest of us.
- Impressionism is a good example.
- These artists realized that light affected color and form in unimaginable (at that point in the history of art). and painted impressionistic scenes so the rest of us could also see them.
- Of course. now most of us do. if we allow ourselves to.
- This really is the essential point—allowing ourselves to.
- We are much more resilient and stable than we imagine.
- We can all handle more uncertainty than we imagine.
- Just because we see or think something out of the ordinary does not mean we're insane.
- It's a normal part of perception.
- Anatomy of Eye (video)
- Visual Nerve Pathways (video)

- Visual Processing in the Retina (video)
- How is the neural signal physically generated?(video)
- The retina contains millions of specialized photoreceptor cells known as rods and cones.
- Within these receptors are membranes.
- The membranes contain visual pigments that absorb light and undergo chemical changes that trigger an electrical signal.
- The visual pigments for both cones and rods are similar in that they consist of retinene joined at both ends to retinal proteins called Opsins.
- Rhodopsin is the retinal protein that is found in the rod cells in the eye and that is responsible for our night vision.
- The three types of cone cells contain slightly different opsins, which form the basis for color vision.
- These three types of cone opsins account for the differences in peak wavelength absorption for each pigment.
- The physical difference between types of opsin can be as small as a few amino acids.
- Where does the signal go when it reaches the brain?
- How is color determined?
- The signal from the retina is analyzed by nerve cells (retinal ganglion cells), which compare the stimulation of neighboring cones, and calculate whether the light reaching a patch of cones is more blue-or-yellow, and red-or-green.
- Next, the signal travels to the brain where it is divided into several pathways - like fiber optics branching throughout the cortex.
- For example, visual signals from the photoreceptors pass to retinal ganglion cells, which code color information, and then to the lateral geniculate nucleus (LGN) in the thalamus, and onwards to the primary visual cortex.
- The primary visual cortex (known as V1) preserves the spatial relationships of images on the retina.
- This property is calledretinoptic organization.

- Studies of the brain
- Beginning around 1970, researchers began seriously to study the visual brain.
- One of the chief discoveries is that it is composed of many different visual areas that surround the primary visual cortex (V1).
- Anatomically, the color pathways are relatively well charted.
- In the monkey, they involve areas V1, V2, V4 and the infero-temporal cortex.
- A similar pathway is involved in the human brain: imaging studies show that V1, V4 and areas located within the fusiform gyrus in the medial temporal lobe are activated by colored stimuli.
- IMAGE just colour and shape
- Summary
- In order to understand the mechanisms of visual perception, we start with a short presentation on the basic elements of the eye which are involved in the visual perceiving.
- This paper talks about three main topics.
- In the first part, we introduce the bio-chemical model whichdescribes how the retina transforms the light stimulation into an electrical pulse.
- Secondly, we show how interactions between photoreceptor cells, mediated by connections in the nervoussystem, can lead to information processing such as making distinction between two.
- The third topic is color vision, where the relation between spectrum and color perception is discussed.

- CONCLUSION

- This is Reality. This is Universal Truth.andThis is Suffering.
- It occurs at any time, any placc. ill regards of age. race and religion
- No beings are involved in the process
- If Convinced about it Cakayadhitti or Attadhitticould be fade out
- If with full Confident Anuthaya could be deleted.
- One shall be Convicted or Commited once and for all.